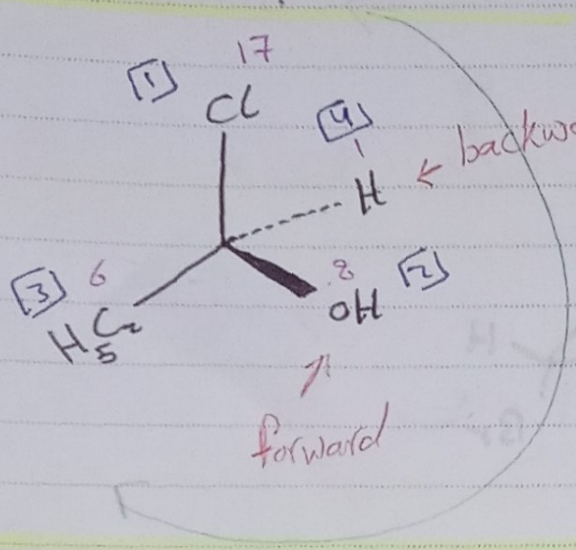
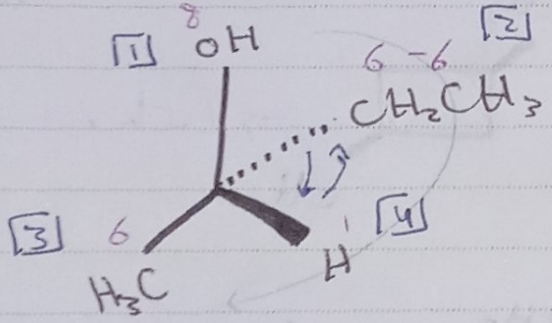
* Representation of molecule :-

[1] Fly - wedge representation :-

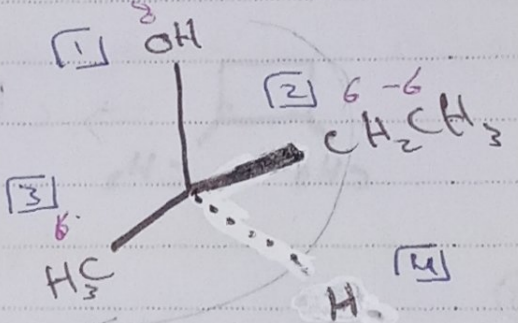
- The atom pointing above the plane is shown by wedge line (forward)
- The atom pointing behind the plane is shown by dotted line (Backward)



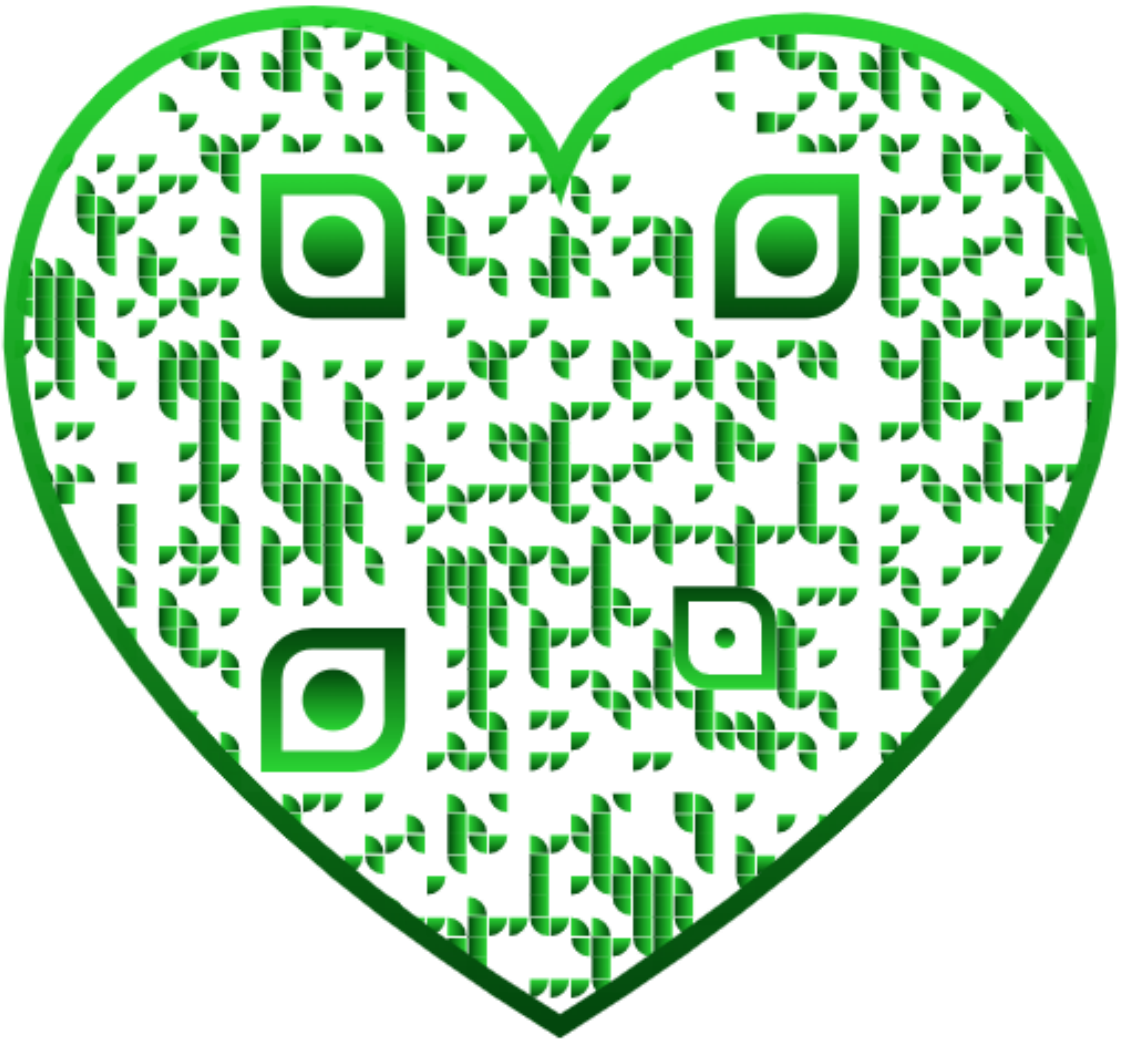
⇒ clockwise (R)



Shifting ⇒



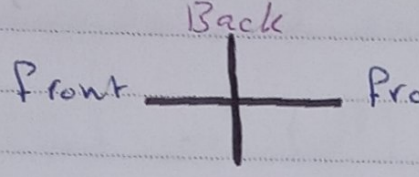
* متى نقول شفت الـ Fly - wedge ؟
- إذا لم تكن H في الخلف (dash)
- إذا لم تأخذ H أقل رقم في الترتيب.



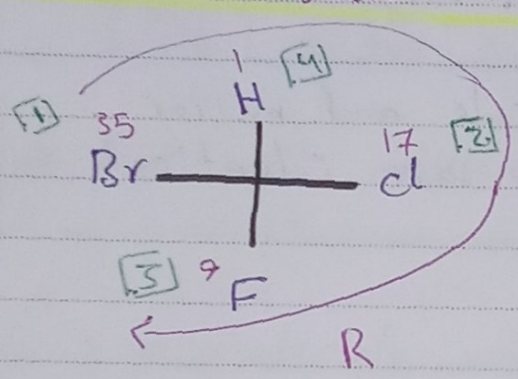
[2] Fischer projections representation :-

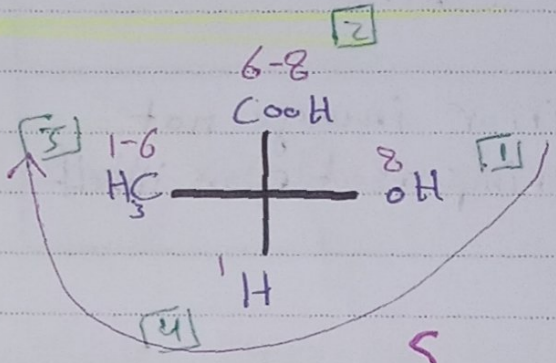
Shown by :-

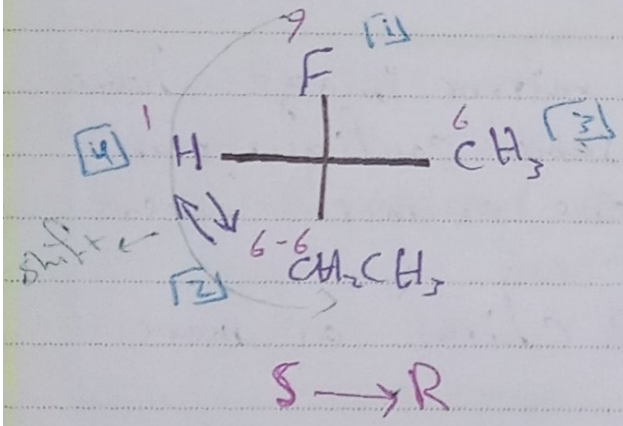
- Horizontal line is coming out of the plane.
- Vertical line is going back behind the plane.

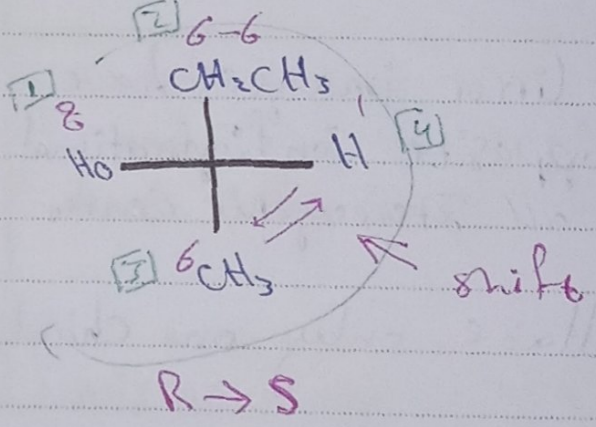


* H ← C ← back إلى
وتأخذ أول عدد ذري









* عندما تنعكس من R ← S أو S ← R تنعكس shift

Conformer isomer	Configurational isomer
Interconvertible (قابل للتحويل) by rotation about single bonds	Not interconvertible by rotation, only by breaking & making bonds

Chiral	Achiral
Mirror image not superimposable on itself	Molecule and mirror image are identical

Enantimer	Diastereomers
- Mirror images; have opposite configuration at all stereogenic center	Not mirror image; have the same configurations at one or more centers
- Have only one chiral	- 2 chiral or more

Drugs	Glucose, amino acid (nature substances)
- Experimental ⇒ Dextro and levo ⇒ d or l + or −	- Experimental ⇒ d or l + or l
- Absolute ⇒ S or R Z or E	- Absolute ⇒ S or R, Z or E - Relative ⇒ D or L

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* Racemic mixture (optical inactive) :-
is one that has equal amounts of enantiomers (equal amounts of left- and right handed enantiomers) of a chiral molecule.

* Symbols of racemic mixture :-

(±) or (dl) or (RS and SR).

(DL) ⇒ for sugars.

Racemic mixture doesn't rotate the light.

* Meso Compounds :-
- is a molecule with multiple stereocenters (chirals) that is superimposable on its mirro image.

* properties of meso Compounds :-
① Has two chiral or more. and should be identical
② Is an achiral compound, but with chiral centers.
③ Optically inactive
④ Doesn't rotate the light.
⑤ no enantiomeric pair (mirror image & superimposable
⑥ has internal mirror plane through centers of molecules, that divide the compound in half.

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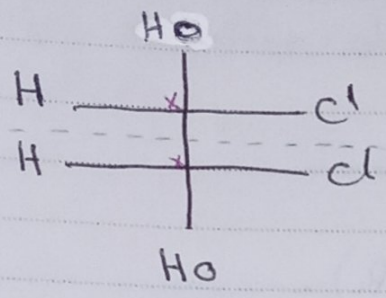
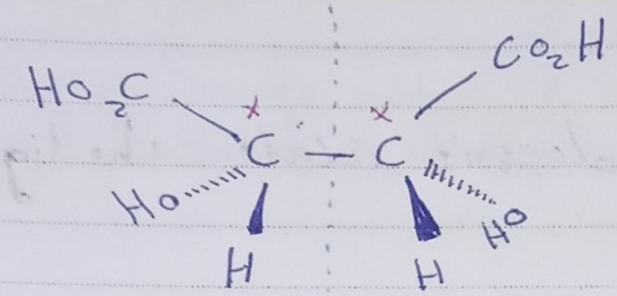
* Examples of Compounds Contain an internal mirror plane of symmetry (Meso Compounds):

① 

← internal plane

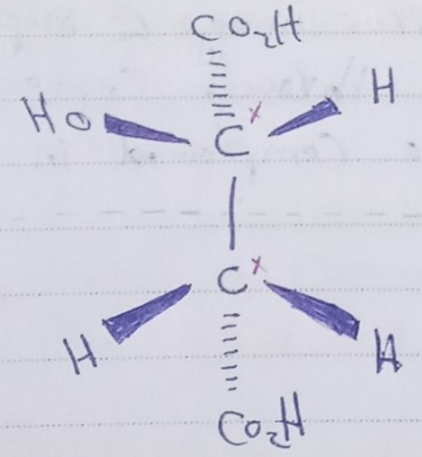
② 

* 2 Chiral Center

③

* إذا وجه اليمين تساوي اليسار أو الي فوق ينطبق على الي تحت يصير achiral

فلا داعي لـ Mirror image

④ 

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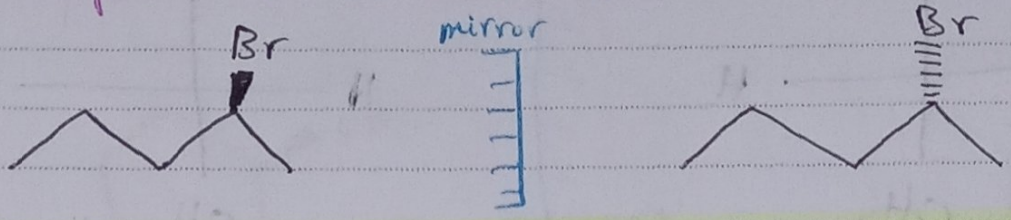
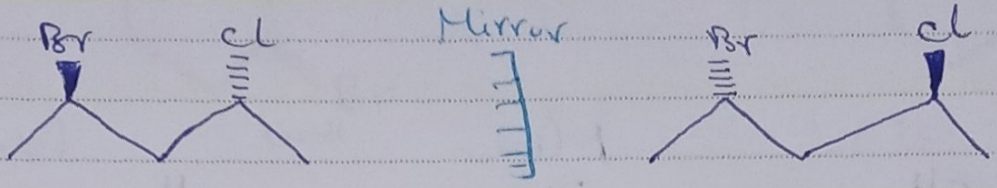
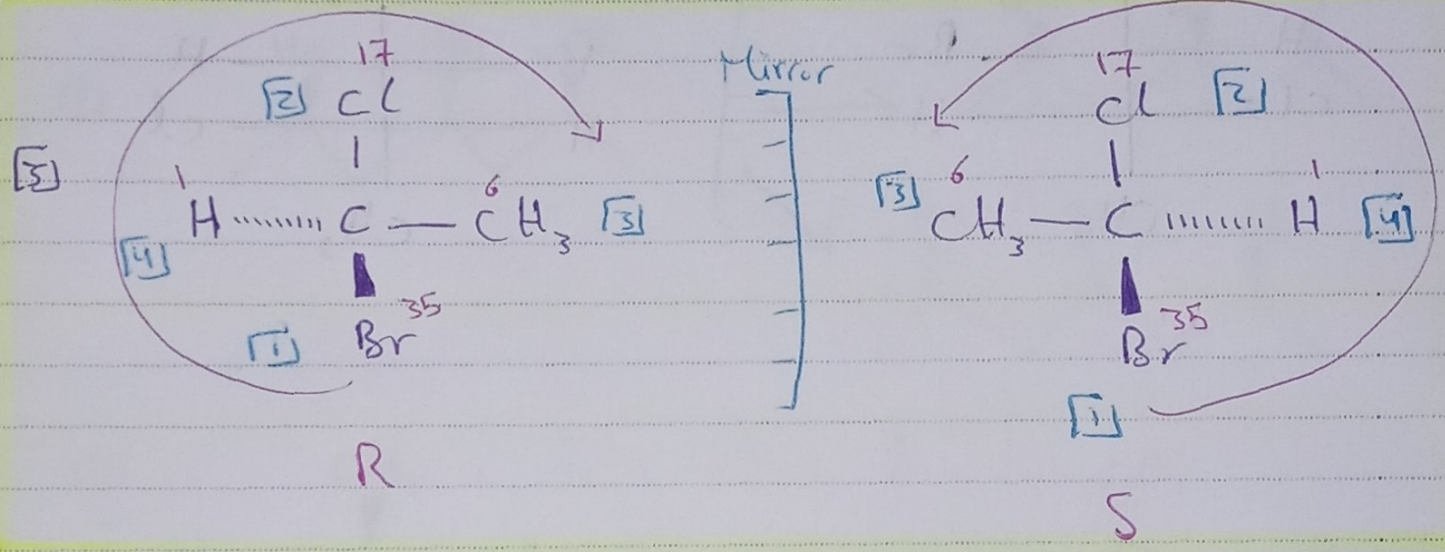
* Examples of Enantimers :-

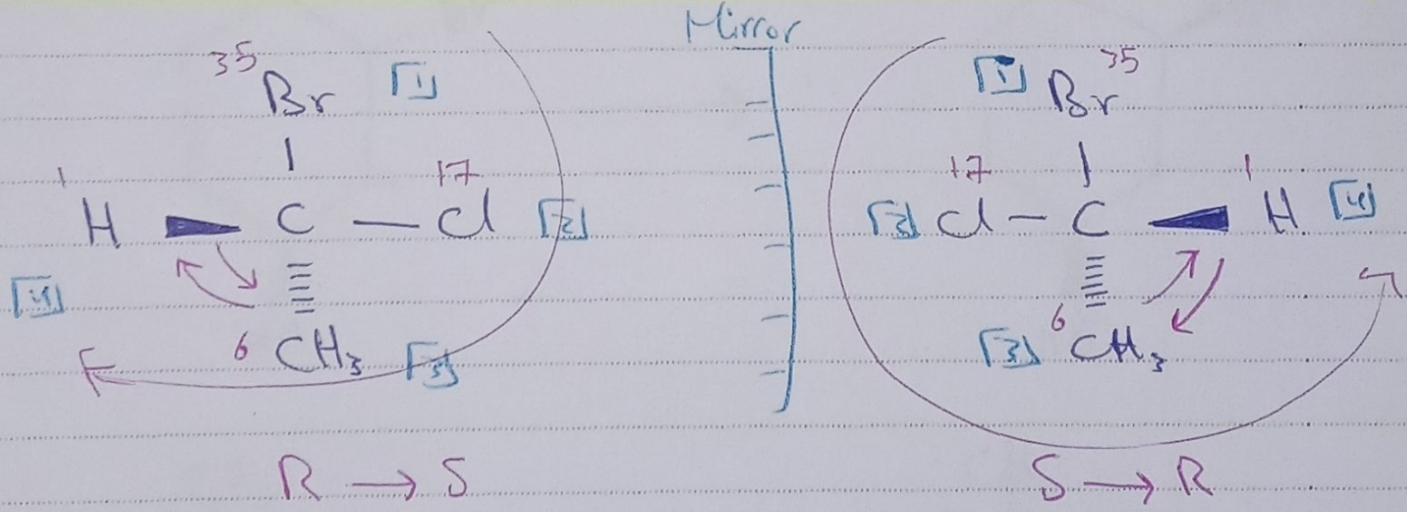
[1]



[2]







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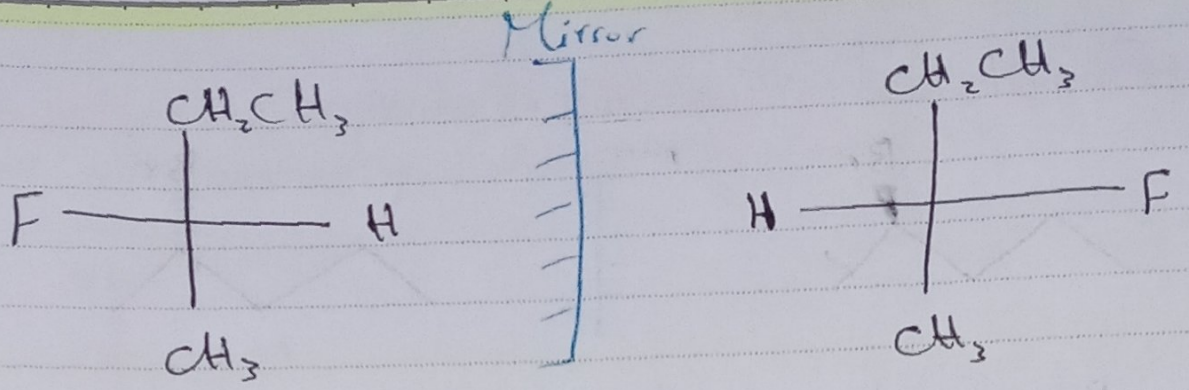
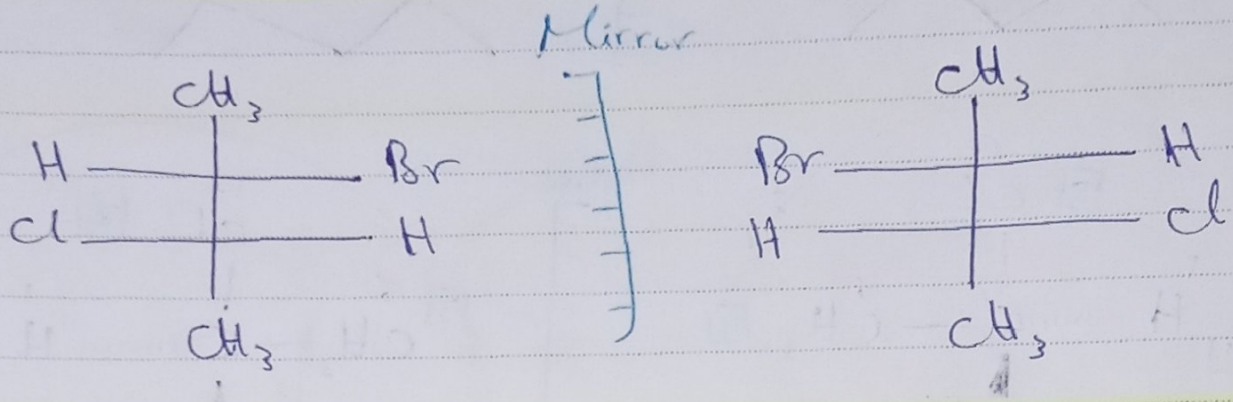
(5)



(6)



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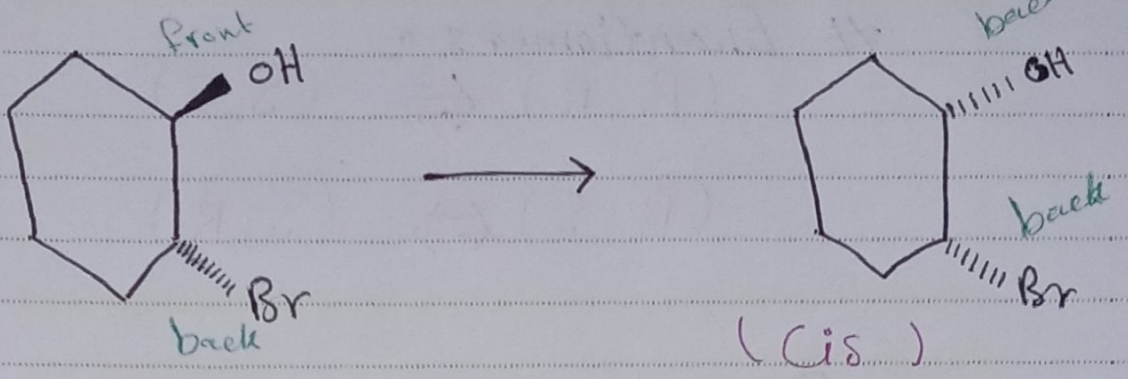
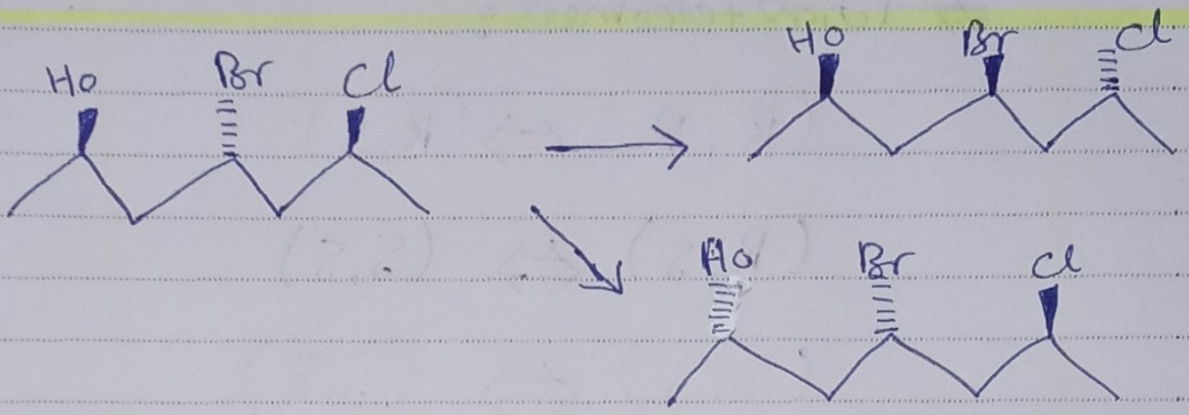
* Examples of diastereomers :

①

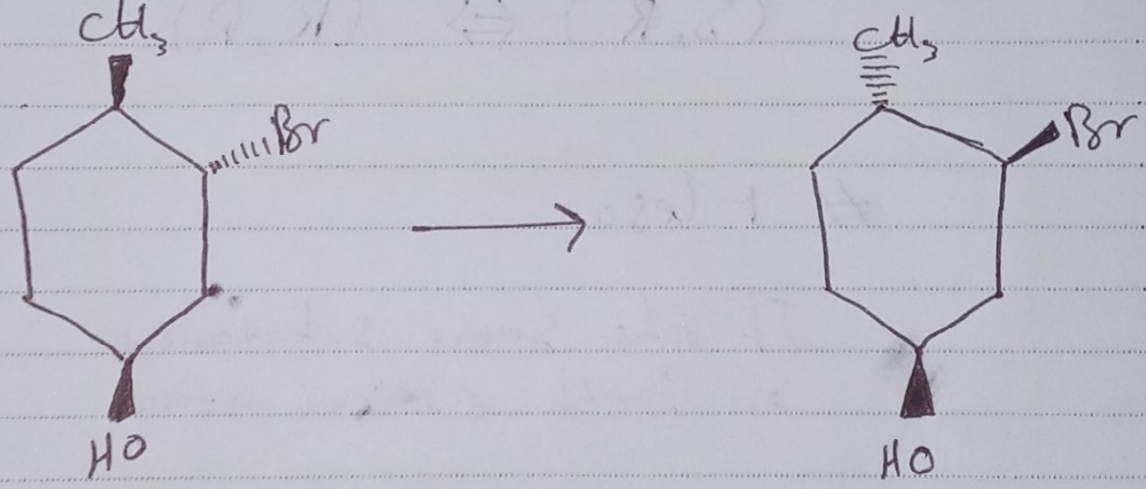


(Trans) (Cis)

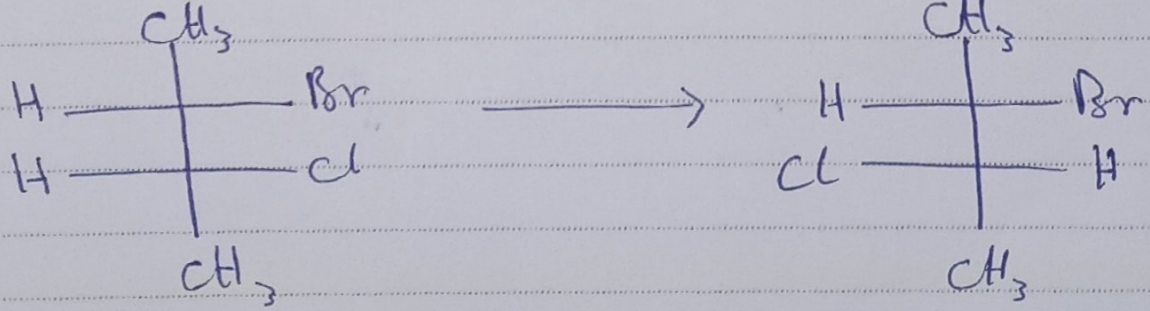
②



③



④



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Enantiomers :

(R, R) ⇔ (S, S)

(R, S) ⇔ (S, R)

Diastereomers :

(R, R) ⇔ (R, S)

(R, S) ⇔ (S, S)

(S, S) ⇔ (S, R)

(S, R) ⇔ (R, R)

Meso :

If the same substances on both Chiral atom.

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